Since 1990, The Spaulding Group has had an increasing presence in the money management industry. Unlike most consulting firms that support a variety of industries, our focus is on the money management industry.

Our involvement with the industry isn't limited to consulting. We're actively involved as members of the CFA Institute (formerly AIMR), the New York Society of Security Analysts (NYSSA), and other industry groups. Our president and founder regularly speaks at and/or chairs industry conferences and is a frequent author and source of information to various industry publications.

Our clients appreciate our industry focus. We understand their business, their needs, and the opportunities to make them more efficient and competitive.

For additional information about The Spaulding Group and our services, please visit our web site or contact Chris Spaulding at

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http://www.SpauldingGrp.com

"A RECORD SETTING EVENT, OF EPIC PROPORTIONS"

A headline similar to the above greeted us a few weeks ago, projecting phenomenally horrific weather for us; sadly (?), they were mistaken: 3-4 inches neither makes a record setting event nor one of epic proportions. So much for the forecasting skills of the National Weather Service.

But what is a record setting event (though also not of epic proportions) is the delay in getting the January newsletter out. Last month, we got the December out earlier than normal, so you might think we're making up for that with our tardiness, but this wasn't our intent. Like most issues, I began weeks ago. However, my travel schedule has been extremely challenging. But, I declared 2015 to be the "no excuses year," and so, no excuse for this delay, for which I can only apologize.

DISPERSION…ARE WE CALCULATING IT CORRECTLY?

In a recent blog post,[1] I discussed what I believe is a misconception regarding the calculation and reporting of composite dispersion for GIPS® compliance. I wish to repeat some of that here, and build upon it.

Let's begin by defining dispersion, specifically, "internal dispersion." As per the GIPS glossary: internal dispersion is "A measure of the spread of the annual returns of individual portfolios within a composite. Measures may include, but are not limited to, high/low, range, or standard deviation (asset weighted or equal weighted) of portfolio returns." For our purposes, we will use the equal-weighted standard deviation. (The asset weighted version should be done away with, but that's another topic which I've taken up in the past but won't today).

I conducted a GIPS verification last month for a client who stated that their dispersion was a measure of variability *around the composite's return*. Well, while I believe that is what it's supposed to be, I doubted that it was. And so, I checked the math and confirmed it wasn't.

Question: It wasn't what?
Answer: It wasn't "around "the composite's return."

Question: Then what was it?
Answer: Around the average return of the set of accounts *that were present the full year*.

1   http://www.spauldinggrp.com/dispersion-around-exactly-question-worth-pondering/

Compliant firms report dispersion when there are six or more accounts present in the composite for the full year. Okay, so let's assume that during the year there were actually 20 accounts, but only ten were present for the full year (e.g., a few were there at the start but were removed by December (terminated, had a significant flow, fell below the minimum) and a few started after the beginning of the year. But, since there are ten present the full year, the firm must report dispersion.

And what is it we're measuring: dispersion around the composite's return or around the average of the ten accounts present the full year? While I believe that the Standards' intent is that it's around the composite's return, I can't prove that. In fact, there is evidence to the contrary. However, I question which makes the most sense, around the composite's return or around the average of this sample of accounts?

Firms report how their strategy did (e.g., +3.38%) and dispersion lets us know whether the accounts were relatively close to this value (a low dispersion (meaning the accounts were managed in a consistent fashion), or widely different dispersion (meaning the accounts had a lot of variation through the year).

For this post, by dispersion we mean equal weighted standard deviation. To measure dispersion using the composite's return is a tad more challenging than it may seem.

Think of Excel, for example. If we isolate the returns of the accounts present the full year, all we need to do is invoke the formula STDEVP (for the population form; STDEV for sample) for these numbers and voilà, we have the answer. But this approach uses the average return of this subset of accounts, not the composite mean.

To calculate standard deviation using the composites return, we have to do it step by step; and while not difficult math, we need to:

1. measure the average return for the set of accounts present for the full year
2. calculate the differences for each of these accounts relative to the average
3. square these numbers
4. sum them up
5. divide by the number of accounts in the set
6. take the square root.

Clearly not rocket science, but a bit more tedious than "=STDEVP." And even with programmed systems, I'm sure that there are standard deviation routines that you simply pass the numbers into, rather than construct your own standard deviation formula.

Most firms will use the average of the sample of accounts, which tells us the dispersion around the sample's average, not the composite return. And so, there's a philosophical difference, we might say, as to what we're actually doing. do we care about how consistent this subset of returns did, or how the dispersion was relative to the composite return that is being reported?

It's hard to say. I'm sure that there are many times when the differences are immaterial, while at others sizable differences can result. I ran the numbers for one of our client's composites (returns have been adjusted here, but without any loss of representativeness).

The client showed dispersion of 0.24%; I suspected it came from the sample of 11 accounts (the composite had 29 accounts throughout the year, 11 present the full year).

I used Excel to confirm our client's number, and then did it the long way, by measuring the dispersion around the average of this sample (+2.93%); and, as you can see, my result (0.24%) tied out (see Figure 1).

Accounts	Returns	If measure against the average account that was present the full year		If measure against the composite's return	
		(x-mean)	(x-mean)^2	(x-Comp)	(x-Comp)^2
1	2.73%	-0.20%	0.0004%	-0.65%	0.0042%
2	2.90%	-0.03%	0.0000%	-0.48%	0.0023%
3	2.64%	-0.29%	0.0009%	-0.74%	0.0055%
4	3.40%	0.47%	0.0022%	0.02%	0.0000%
5	2.74%	-0.19%	0.0004%	-0.64%	0.0041%
6	2.81%	-0.12%	0.0002%	-0.57%	0.0032%
7	2.75%	-0.18%	0.0003%	-0.63%	0.0040%
8	2.99%	0.06%	0.0000%	-0.39%	0.0015%
9	3.23%	0.30%	0.0009%	-0.15%	0.0002%
10	3.25%	0.32%	0.0010%	-0.13%	0.0002%
11	2.83%	-0.10%	0.0001%	-0.55%	0.0030%
STDEVP =	0.24%	Sum of Squares =	0.0063%	Sum of Squares =	0.0283%
		Divide by n (11)	0.0006%	Divide by n (11)	0.0026%
		Average =	2.93%	Composite ROR =	3.38%
		Square Root =	0.24%	Square Root =	0.51%

Figure 1

I then manually calculated dispersion around the composite's return (+3.38%) and found a significantly different standard deviation result: 0.51 percent.

The requirement for dispersion has its origin with the second edition of the AIMR-PPS® (AIMR Performance Presentation Standards), which was published in 1997. Knowing what a manger's return was is important information, but knowing how consistent they were in managing the accounts is also important. Therefore, to gain some insights into the dispersion a composite's constituent account's performance has value.

But do we want to know how consistent the manager performed for this group, or relative to the composite's return? I would think the latter makes more sense.

I think this is a confusing topic, and perhaps not really worthy of the attention I'm giving it (and no, it's not a "slow news day"). But just as with verification, where most prospective client thought (or perhaps, "think" would still be better) that it involves the "verification of a firm's claim of compliance," dispersion, too, is most likely not what most readers (and some asset owners) think it is.

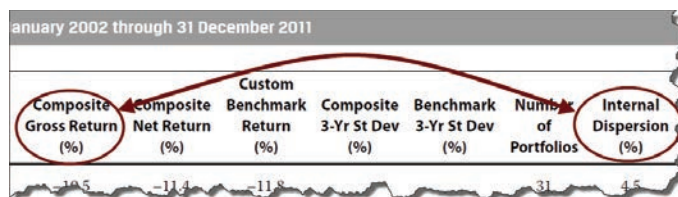When you look at a report, similar to what appears in Appendix A of the Standards, we find something like:

Figure 2

Wouldn't the reader somehow connect the dispersion measure with the composite return, in order to determine how likely it would be that they would have gotten that return? I believe that was the intent of introducing this requirement in the AIMR-PPS, which made its way into the GIPS standards.

We know that standard deviation is based on the bell-shaped curve or normal distribution. Figure 3 may help demonstrate the challenge I have with this topic. Here I'm showing two different curves, one representing the distribution around the composite return, and the other representing the distribution around the average of those accounts present for the full year. The reader, I suspect, is assuming the reported dispersion is around the composite's return; however, it's around the average of the set of accounts present the full y ear.

Do I care how consistent you were with accounts present the full year, or how representative the return you're reporting is relative to what was achieved by the clients in the composite? You're telling me that the composite had a return of 3.38%, but its standard deviation is wider than what is around this sample, which has a totally different return.
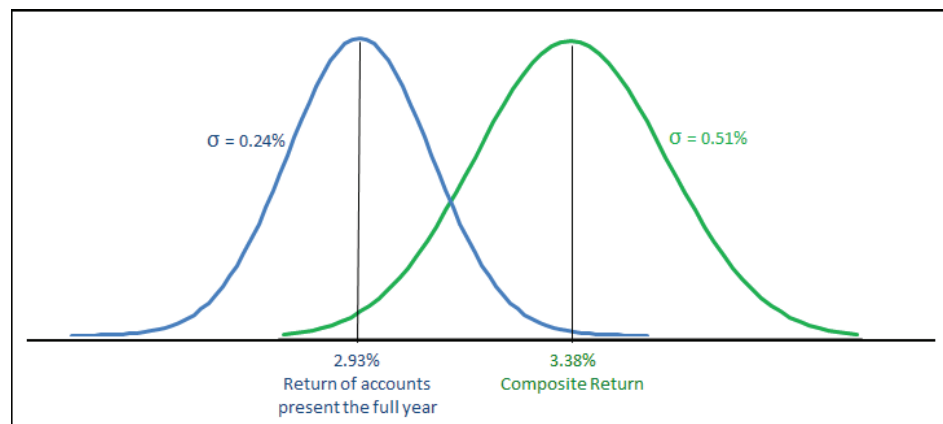

Figure 3

I also believe that as with the use of the aggregate method for composite returns, the use of dispersion measures that fail to use the composite's return are measuring the wrong thing. However, just as with the aggregate method, this approach is well entrenched within our industry.

The purpose for this post is mainly to provide some insights into what is really going on, for folks to ponder this, and perhaps to come to their own conclusions and ideas.

More research would be needed to determine the extent of what might be considered "misleading dispersions" being reported. In the mean time, perhaps the Standards could require firms to report the average return of the accounts which make up this sample (of accounts present the full year). Or, to require firms to explain whether their dispersion is around the composite return or the average of accounts present the full year. The ideal would be to set a date (perhaps January 2020) by which time dispersion must be adjusted so that it's around the composite returns.

Just some thoughts…discussion would help, I suspect, and as always, your ideas and reactions are invited and welcome. If you visit the blog post, you'll find there was quite a bit of chatter as a result, though more is welcome.

ANOTHER SPAULDING GROUP AWARD

We're pleased to announce that we received yet another award.

ACQ5[4] named us the US GIPS Consulting Firm of the Year. This is the second such award, and we're quite pleased, as you might expect.

PUZZLE TIME

This is a very unusual issue, since we'll reveal the results of puzzles for two different months. We got the December issue out sooner than normal, and wanted folks to have a chance to respond before revealing the result.

November Puzzle[2]

A fisherman, wearing a large straw hat, was fishing from a rowboat in a river that flowed at a speed of three miles an hour. His boat drifted down the river at the same rate.

"I think I'll row upstream a few miles," he said to himself. "The fish don't seem to be biting here."

Tom Stapleton	USA
Malcolm Smith	UK

Just as he started to row, the wind blew off his hat and it fell into the water beside the boat, but the fisherman didn't notice his hat was gone until he had rowed upstream five miles from his hat. Then he realized what must have happened, so he immediately started rowing back downstream again until he came to his floating hat.

In still water, the fisherman's rowing speed is always five miles per hour. When he rowed upstream and back, he rowed at this same constant speed, but of course this would not be the speed relative to the shore of the river, because the water was also in motion. For instance, when he rowed upstream at five miles an hour, the river would be carrying him downstream at three miles an hour, so he would be passing objects on the shore at two miles an hour. And when he rowed downstream, his rowing speed and the speed of the river would combine to make his speed the equivalent of eight miles an hour with respect to the shore.

If the fisherman lost his hat at two o'clock in the afternoon, what time was it when he recovered it?

Solution: The river's speed has the same effect on the had and boat, so we can ignore it. Since the man rows five miles away from the hat, then five miles back, he has rowed a total of ten miles, with respect to the water. Since his rowing speed relative to the water is five miles an hour, it would have taken him two hours to row 10 miles. Therefore, he recovers his hat at four o'clock.

This must have been a trickier puzzle than normal, because (a) only two readers got it right, and (b) others tried, but got an incorrect answer. Oh, darn!

December Puzzle

The missing present from Santa's Sleigh[3]

Santa took off from the North Pole on his long around-the-world journey. Unfortunately, Mrs. Claus discovered that he had left a present behind. Instead of summoning him back, she decided to take off in her G650, which travels at 20 times the speed of Santa's sleigh.

2 Source: *Entertaining Mathematical Puzzles*, by Martin Gardner
3 Source (with some modifications): *The Moscow Puzzles*, by Boris A. Kordemsky
4 http://www.acq5.com/about-acq5/

She departs the North Pole when Santa is 180 miles away. How far from the pole will she catch up with Santa, so that she can give him the present?

Solution:

Edmund Robinson provided a very detailed response, which I'll share with you:

Mrs Claus will intercept Santa 189.4 miles from the Pole.

Workings:
Santa's speed = x (m/h),
Mrs Claus speed = 20x (m/h)

Debi Deyo Rossi	USA
Malcolm Smith	UK
Anthony Howland	UK
Gerard van Breukelen	Netherlands
Kaspar Jannings	Denmark

They will meet in the time (in hours) it takes for both of them to travel the same distance (in miles).

Mrs Claus distance as a function of time is $Md(t) = 20xt$
Santa's distance as a function of time is $Sd(t) = 180 + xt$

Let $Md(t) = Sd(t)$
  $20xt = 180 + xt$
$\Rightarrow xt = 180/19$

Substitute result into both $Md(t)$ and $Sd(t)$ for distance and to check.
$Md = 20 (180/19) = 189.4$
$Sd = 180 + (180/19) = 189.4$

**January Puzzle**

The police have arrested six criminals and are trying to identify the boss. The police inspector made the suspects to form a line-up, in the same order as the following table, and has asked each of them four questions, as shown in the table, along with their answers.

#	Questions	John	Julian	Igor	David	Peter	James
1	Are you the boss?	NO	NO	NO	NO	NO	YES
2	Is the boss standing to your left?	NO	YES	NO	NO	YES	NO
3	Is the boss standing to your right?	NO	YES	YES	NO	YES	NO
4	Is the boss standing next to you?	YES	YES	YES	YES	NO	NO

Each criminal lied exactly two times. On the basis of this information, identify who the boss is. Just to clarify, David is to the left of Igor, while Julian is to Igor's right (i.e., it's from *their* perspective).
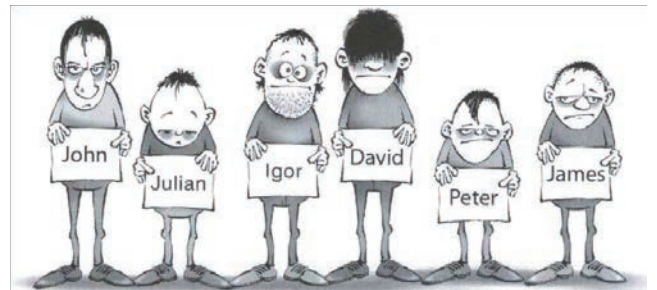
THE SPAULDING GROUP'S 2015
INVESTMENT PERFORMANCE MEASUREMENT CALENDAR OF EVENTS

DATE	EVENT	LOCATION
March 10-11	Fundamentals of Performance Measurement	Toronto, ON Canada
March 12-13	Performance Measurement Attribution	Toronto, ON Canada
March 23-24	CIPM Principles Prep Class	New Brunswick, NJ (USA)
March 25-27	CIPM Expert Prep Class	New Brunswick, NJ (USA)
April 22	Asset Owner Roundtable Meeting	Chicago, IL (USA)
April 23-24	Performance Measurement Forum	Chicago, IL (USA)
May 12-13	PMAR North America	Philadelphia, PA (USA)
May 14-15	Fundamentals of Performance Measurement	New Brunswick, NJ (USA)
June 15-16	PMAR Europe	London, England
June 18-19	Performance Measurement Forum	Dubrovnik, Croatia
July 14-15	Fundamentals of Performance Measurement	Chicago, IL (USA)
July 16-17	Performance Measurement Attribution	Chicago, IL (USA)
August 24-25	CIPM Principles Prep Class	Chicago, IL (USA)
August 26-27	CIPM Expert Prep Class	Chicago, IL (USA)
September 16	Portfolio Risk	San Diego, CA (USA)
October 20-21	Fundamentals of Performance Measurement	Los Angeles, CA (USA)
October 22-23	Performance Measurement Attribution	Los Angeles, CA (USA)
November 5-6	Performance Measurement Forum	Prague, Czech Republic
November 18	Asset Owner Roundtable Meeting	Phoenix, AZ (USA)
November 19-20	Performance Measurement Forum	Phoenix, AZ (USA)
Nov. 30 – Dec. 4	Virtual PMAR – An online conference event	
December 8-9	Fundamentals of Performance Measurement	New Brunswick, NJ (USA)
December 10-11	Performance Measurement Attribution	New Brunswick, NJ (USA)

For additional information on any of our 2015 events, please contact Christopher Spaulding at 732-873-5700

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March 10-11, 2015 – Toronto, ON Canada
May 14-15, 2015 – New Brunswick, NJ
July 14-15, 2015 – Chicago, IL
October 20-21, 2015 – Los Angeles, CA
December 8-9, 2015 – New Brunswick, NJ

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PERFORMANCE MEASUREMENT ATTRIBUTION

Two full days devoted to this increasingly important topic. The Spaulding Group, Inc. invites you to attend Performance Measurement Attribution on these dates:

March 12-13, 2015 – Toronto, ON Canada
July 16-17, 2015 – Chicago, IL
October 22-23, 2015 – Los Angeles, CA
December 10-11, 2015 – New Brunswick, NJ

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IN-HOUSE TRAINING

The Spaulding Group has offered in-house training to our clients since 1995. Beginning in 1998, we formalized our training, first with our Introduction to Performance Measurement class and later with our Performance Measurement Attribution class. We now also offer training for the CIPM program. To date, close to 3,000 individuals have participated in our training programs, with numbers increasing monthly.

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